WHAT IS CLAIMED IS:

A system for optimization of a scene graph, comprising:

 an optimization base comprising logic for at least one atomic
 optimization;

an optimization registry listing said at least one atomic optimization, and further listing parameter and priority information associated with said at least one atomic optimization;

an optimization manager for creating, configuring, and applying an optimization process to an input scene graph, wherein said optimization process comprises logic for an atomic optimization; and

an optimization configuration manager for accepting user configuration information to said optimization process.

- 2. The system of claim 1, further comprising a user interface through which a user can provide said user configuration information to said optimization configuration manager.
- 3. The system of claim 2, wherein said user interface is provided to a user by a modeler that produces the scene graph to be optimized
- 4. The system of claim 1, wherein said user configuration information comprises a selection of an atomic optimization.
- 5. The system of claim 4, wherein said user configuration information comprises a specification of parameter values associated with said selected atomic optimization.
- 6. The system of claim 1, wherein said at least one atomic optimization comprises a collapse geometry optimization.

- 7. The system of claim 1, wherein said at least one atomic optimization comprises a collapse hierarchy optimization.
- 8. The system of claim 1, wherein said at least one atomic optimization comprises a convert image optimization.
- 9. The system of claim 1, wherein said at least one atomic optimization comprises a convert transform optimization.
- 10. The system of claim 1, wherein said at least one atomic optimization comprises a create bounding boxes optimization.
- 11. The system of claim 1, wherein said at least one atomic optimization comprises a flatten hierarchy optimization.
- 12. The system of claim 1, wherein said at least one atomic optimization comprises a generate macro texture optimization.
- 13. The system of claim 1, wherein said at least one atomic optimization comprises a normalize texture coordinates optimization.
- 14. The system of claim 1, wherein said at least one atomic optimization comprises a promote attributes optimization.
- 15. The system of claim 1, wherein said at least one atomic optimization comprises a remove attributes optimization.
- 16. The system of claim 1, wherein said at least one atomic optimization comprises a resize image optimization.

- 17. The system of claim 1, wherein said at least one atomic optimization comprises a share attributes optimization.
- 18. The system of claim 1, wherein said at least one atomic optimization comprises a spatial partition optimization.
- 19. The system of claim 1, wherein said at least one atomic optimization comprises a strip triangles optimization.
- 20. The system of claim 1, wherein said at least one atomic optimization comprises a transform alpha optimization.
- 21. The system of claim 1, wherein said at least one atomic optimization comprises a vertex blending optimization.
- 22. A method of optimization of a scene graph, comprising the steps of:
 - a. receiving an input scene graph;
 - b. creating an optimization process; and
- c. applying the optimization process to the input scene graph to create a scene graph optimized for at least one of enhancement of traversal time, enhancement of drawing time, reduction of memory usage, efficiency of data manipulation, and
- 23. The method of claim 22, wherein said step b comprises the steps of:

targeting a specific rendering platform.

- i. receiving user input identifying an atomic optimization and any associated parameters;
- ii. accessing the atomic optimization via an optimization registry;
- iii. incorporating the atomic optimization into the optimization process;
- iv. if the user input comprises parameters associated with the optimization, configuring the optimization process according to the parameters; and
- v. if the user input does not comprise parameters, configuring the optimization process according to default parameters.
- 24. The method of claim 23, wherein the atomic optimization comprises a collapse geometry optimization.
- 25. The method of claim 23, wherein the atomic optimization comprises a collapse hierarchy optimization.
- 26. The method of claim 23, wherein the atomic optimization comprises a convert image optimization.
- 27. The method of claim 23, wherein the atomic optimization comprises a convert transform optimization.
- 28. The method of claim 23, wherein the atomic optimization comprises a create bounding boxes optimization.
- 29. The method of claim 23, wherein the atomic optimization comprises a flatten hierarchy optimization.

- 30. The method of claim 23, wherein the atomic optimization comprises a generate macro texture optimization.
- 31. The method of claim 23, wherein the atomic optimization comprises a normalize texture coordinates optimization.
- 32. The method of claim 23, wherein the atomic optimization comprises a promote attributes optimization.
- 33. The method of claim 23, wherein the atomic optimization comprises a remove attributes optimization.
- 34. The method of claim 23, wherein the atomic optimization comprises a resize image optimization.
- 35. The method of claim 23, wherein the atomic optimization comprises a share attributes optimization.
- 36. The method of claim 23, wherein the atomic optimization comprises a spatial partition optimization.
- 37. The method of claim 23, wherein the atomic optimization comprises a strip triangles optimization.
- 38. The method of claim 23, wherein the atomic optimization comprises a transform alpha optimization.
- 39. The method of claim 23, wherein the atomic optimization comprises a vertex blending optimization.

- 40. The method of claim 22, further comprising the step of:
 - d. performing post-optimization processing.
- 41. The method of claim 40, wherein said step d comprises the steps of:
 - i. performing validity checks on the optimized scene graph;
 - ii. creating statistics based on the optimization process; and
 - iii. outputting the statistics.
 - 42. The method of claim 22, further comprising the step of:
 - d. outputting an optimized scene graph.
- 43. A computer program product comprising a computer usable medium having computer readable program code means embodied in said medium for causing an application program to execute on a computer that optimizes a scene graph, said computer readable program code means comprising:
- a. computer readable program code means for causing the computer to receive an input scene graph;
- b. computer readable program code means for causing the computer to create an optimization process; and
- c. computer readable program code means for causing the computer to apply the optimization process to the input scene graph to create a scene graph optimized for at least one of

enhancement of traversal time, enhancement of drawing time, reduction of memory usage, efficiency of data manipulation, and targeting a specific rendering platform.

- 44. The computer program product of claim 43, wherein said computer readable program code means b comprises:
- i. computer readable program code means for causing the computer to receive user input identifying an atomic optimization and any associated parameters;
- ii. computer readable program code means for causing the computer to access the atomic optimization via an optimization registry;
- iii. computer readable program code means for causing the computer to incorporate the atomic optimization into the optimization process;
- iv. computer readable program code means for causing the computer to configure the optimization process according to the parameters, if the user input comprises parameters associated with the optimization; and
- v. computer readable program code means for causing the computer to configure the optimization process according to default parameters, if the user input does not comprise parameters.
- 45. The computer program product of claim 44, wherein the atomic optimization comprises a collapse geometry optimization.
- 46. The computer program product of claim 44, wherein the atomic optimization comprises a collapse hierarchy optimization.
- 47. The computer program product of claim 44, wherein the atomic optimization comprises a convert image optimization.
- 48. The computer program product of claim 44, wherein the atomic optimization comprises a convert transform optimization.
- 49. The computer program product of claim 44, wherein the atomic optimization comprises a create bounding boxes optimization.

- 50. The computer program product of claim 44, wherein the atomic optimization comprises a flatten hierarchy optimization.
- 51. The computer program product of claim 44, wherein the atomic optimization comprises a generate macro texture optimization.
- 52. The computer program product of claim 44, wherein the atomic optimization comprises a normalize texture coordinates optimization.
- 53. The computer program product of claim 44, wherein the atomic optimization comprises a promote attributes optimization.
- 54. The computer program product of claim 44, wherein the atomic optimization comprises a remove attributes optimization.
- 55. The computer program product of claim 44, wherein the atomic optimization comprises a resize image optimization.
- 56. The computer program product of claim 44, wherein the atomic optimization comprises a share attributes optimization.
- 57. The computer program product of claim 44, wherein the atomic optimization comprises a spatial partition optimization.
- 58. The computer program product of claim 44, wherein the atomic optimization comprises a strip triangles optimization.
- 59. The computer program product of claim 44, wherein the atomic optimization comprises a transform alpha optimization.

- 60. The computer program product of claim 44, wherein the atomic optimization comprises a vertex blending optimization.
 - 61. The computer program product of claim 43, further comprising:
 - d. computer readable program code means for causing the computer to perform post-optimization processing.
- 62. The computer program product of claim 61, wherein said computer readable program code means d comprises:
- i. computer readable program code means for causing the computer to perform validity checks on the optimized scene graph;
- ii. computer readable program code means for causing the computer to create statistics based on the optimization process; and
- iii. computer readable program code means for causing the computer to output the statistics.
 - 63. The computer program product of claim 43, further comprising:
- d. computer readable program code means for causing the computer to output an optimized scene graph.